A NEW BRACKISH-WATER CHAETOGNATH

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ONE PLATE

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The results of the fishery investigations made in lakes of Hokkaido by the Hokkaido Fishery Experiment Station (Vol. 36, 1934) reported us the occurrence of *Sagitta regularis* Aida in Lake Notoro in June and October 1932. It seemed, however, very questionable that *Sag. regularis*, a warm oceanic water form, was living in that brackish lake which is located on the Okhotsk-Sea coast of Hokkaido in complete isolation from the sea in winter, although it becomes continuous to the sea from spring to autum. Through the kindness of Mr. Y. Hada of the Akkesi Marine Biological Station, I had a chance to examine 9 specimens of chaetognaths collected by him from the same lake in March 1938. 7 of these were quite multilated, while the remaining 2 were so perfect that I could compare the specimens with *Sag. regularis* closely and ascertain that they represent a new species. It is very probable that this new chaetognath was taken for *Sag. regularis* by the member of the Fishery Station on account of the smallness of the body and the existence of massive collarette in both species.

Before going to the description of this new species, I express here my hearty thanks to Mr. Y. Hada for his kindness in giving me the present valuable specimens.

Sagitta tumida n. sp.

Body 4.11–4.34 mm long, with tail segment occupying its 34.6–35.8%; extremely slender as in *Sag. delicata* and nearly of uniform broadness, although slightly wider in posterior portion of trunk, where ovaries are contained. Ventral ganglion relatively very large with its lateral sides extending slightly beyond the general contour of trunk. Lateral field of medium size; musculature moderately developed. Neck

distinct, though not very conspicuous. Arrangement of collarettes peculiar: very thin around neck; very thick between anterior end of ventral ganglion and front end of anterior fin, then becoming gradually thinner posteriorly to the interzone between anterior and posterior fins where the collarettes are very thick again, although thinner than in the more anterior area. These voluminous masses of collarettes occupy the dorsal side of the trunk only, as shown clearly in the profile of the animal (fig. 2). The two specimens differ from each other in some minute points in the arrangement of collarettes. In the smaller specimen (fig. 1), the anterior and posterior collarette-masses are connected with each other by a thin band of collarettes, and the posterior mass begins at the caudal end of the anterior fin, while in the larger specimen (fig. 1′), there is no band of collarettes between anterior and posterior masses, and the posterior mass begins slightly behind the anterior fin. No constriction at tail septum.

Anterior fin very small and elongate, begins behind the ventral ganglion; the distance to ventral ganglion being about 1/3 of the length of ganglion. Rayless zone absent. Posterior fin longer than 2 times anterior fin, obtusely triangular in shape and lies more on tail segment than on trunk, being broadest behind the tail septum. Rayless zone absent. Tail fin long and spatulate.

The apparent shape of eye-pigment roundish. Corona ciliata begins on neck and stretches posteriorly about $1\frac{1}{2}$ times head length with its caudal end reaching near the front end of anterior collarette-mass. It is roughly elongate-elliptical in shape and slightly incurved laterally in posterior half. Diverticula at the beginning of intestine very distinct.

Hooks 7–9; anterior teeth 1–3; posterior teeth 3–5. Hooks slender with a sharp point, marked with a crest along the edge of shaft as in *Pterosagitta draco*, consequently no marginal denticulation being present. Vestibular ridge with several papillae; notch and wing indistinguishable.

Both specimens are not yet fully matured. Ovaries contain several ova, but do not reach beyond the middle of the range between front end of posterior fin and tail septum. Seminal receptacle opens on a minute papilla. Seminal vesicle is not found in either specimen. It is likely that the vesicle is formed just behind the posterior fin, since the body wall of that portion is thickened conspicuously as shown in fig. 4.

Formula:

Body length in mm	Tail segment in %	Hooks	Anterior teeth	Posterior teeth
4.11	35.8	9—9	1—3	4—4
4.34	34.6	7—8	2—3	3—5

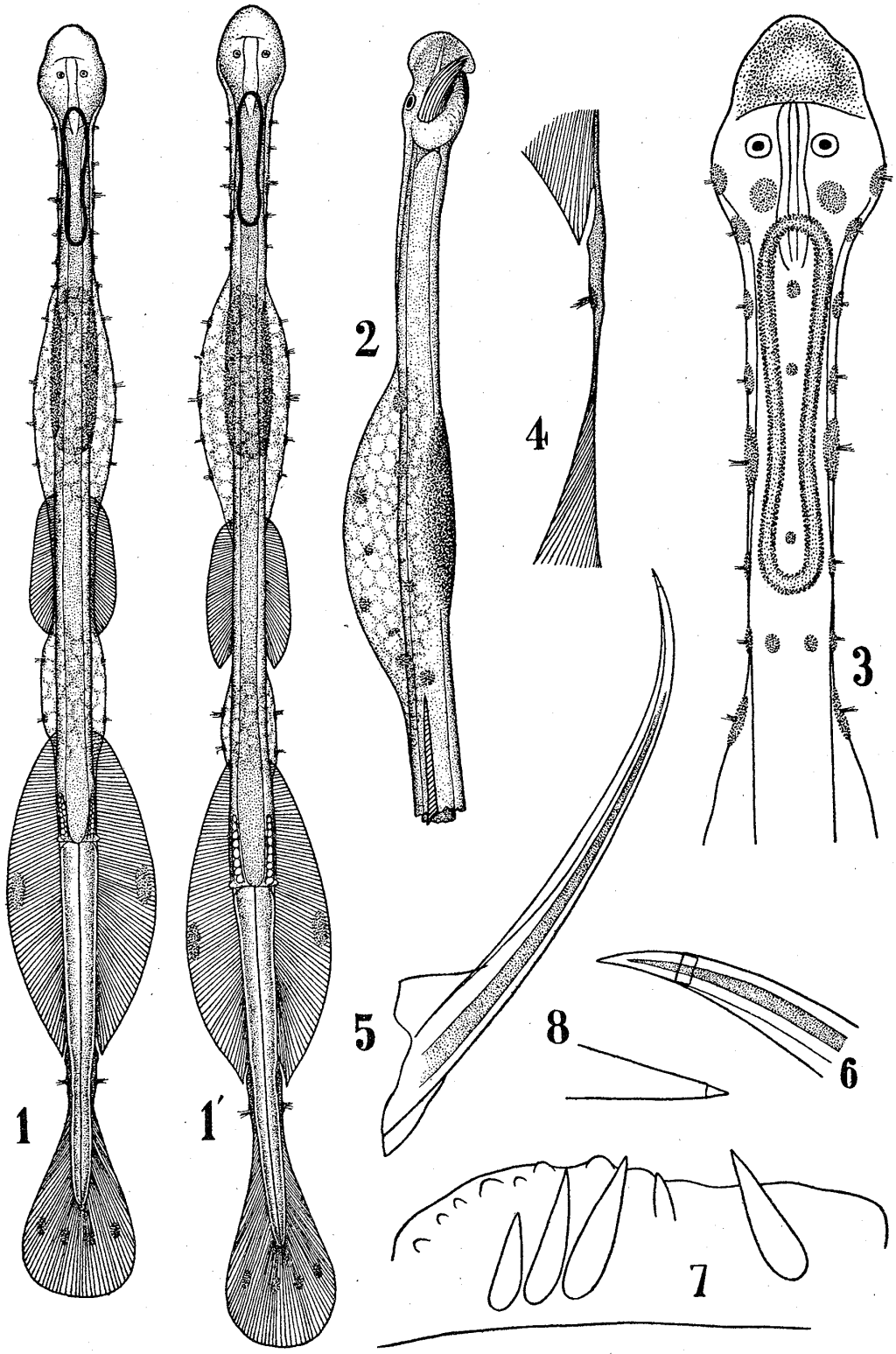
Remarks: Though the present specimens are still young, they show exactly the same appearance as the fully mature individuals. The existence of the massive collarettes recalls us of *Sag. regularis* and *Sag. crassa*. The present new species resembles *Sag. regularis* in 1) the smallness of body, 2) the shape of corona ciliata, and 3) in the fewness of teeth, but it differs distinctly from the latter in 1) the arrangement of collarettes, 2) the size of anterior fin, and 3) in the presence of a crest along the edge of the shaft of hook. It conforms with *Sag. crassa* in the essential feature of the arrangement of the collarettes and in the type of the corona ciliata. Since *Sag. crassa* varies much in the size of mature individuals, in the shape of corona ciliata, and in the relative size of the ventral ganglion, it is possible that the present species represents a variety or a form of *Sag. crassa*. There are, however, several distinctive features between them in 1) the size of anterior fin, 2) the number of teeth, and 3) in the presence or absence of the crest along the edge of the shaft of hook. Accordingly, I propose to treat the present specimens as a new species—*Sagitta tumida* n. sp.. This is the second brackish-water chaetognath found in the Japanese waters. The temperature, Cl-content and salinity of the water of Lake Notoro when the chaetognaths were collected are shown below :

Date	Temperature (C)	Cl-content	Salinity
June, 1932	8.7—23.8	15.21—17.10	27.48—30.90
October, 1932	11.5—14.6	14.49—17.48	26.18—31.58
March 7, 1938	−5.0—−1.3	13.77—13.87	24.88—25.07

EXPLANATION OF PLATE 14

(*Sagitta tumida* n. sp.)

1. }
1′. } Entire animal, dorsal. ×40.
2. Profile of anterior trunk of 1′. ca. ×50.
3. Anterior part of trunk, dorsal. ca. ×100.
4. Posterior part of tail segment, ventral. ca. ×100.
5. Hook. ca. ×620.
6. Distal portion of hook. ×1725.
7. Left anterior and posterior teeth. ca. ×1030.
8. Tip of anterior tooth. ×1725.



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